



List B Wildlife and Plant Species

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List B Wildlife and Plant Species

This report provides information about List B plant wildlife and plant species, examines potential effects on these species from activities covered by the Plan, and describes measures proposed for List A and/or these species to avoid and mitigate adverse impacts the species and their habitats. For information about and measures for List B fish species, see the Aquatic Species Conservation Plan (Part D, Volume IV).

INFORMATION SOURCES

The same sources consulted in identifying List A and focus species were used in compiling information about List B species. These sources include:

- Conversations with California Department of Fish and Game Personnel,
- CDFG publications identifying state and federally listed animals, special animals, and listed plants in California;
- Sensitive species designated by the Board of Forestry pursuant to California Forest Practice Rules;
- The California Wildlife Habitat Relationships (CWHR) Database System and Natural Diversity Data Base;
- The California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California and associated electronic inventory; and
- U.S. Department of Interior lists of Endangered and Threatened Wildlife and Plants, together with listing proposals, draft rules, and final listing decisions.

LIST B SPECIES

A. Birds

1. Elanus caeruleus, black-shouldered kite

a) Natural History

The black-shouldered kite is a California fully protected species, and a CDFG "Special Animal". The range of this species in California is throughout the length of the state, west of the Sierra Nevada and deserts. It may have experienced a range expansion with the advent of irrigation of grasslands for agriculture, which in turn produces habitat for meadow mice, a preferred prey species (Small 1974). This kite generally nests in trees adjacent to areas suitable for foraging.

b) Baseline Condition

In the north coast area the species is a common resident and breeder; being most common in agricultural and riparian areas of the coastal plain (Harris 1991, 1996). No nests of this species are known to occur on the PALCO ownership. The black-shouldered kite is often seen foraging in open grasslands and agricultural areas adjacent to this ownership. Observations have been made in the Humboldt WAA and Eel WAA. There are approximately 3,836 acres of open prairie grassland habitat currently in the Plan Area (Volume I, Table 4).

c) Activities with Potential for Impacts

Timber management is a covered activity with the potential for impacts. Logging could lead to the harvest or disturbance of undetected nest sites.

d) Mitigation Measures

It is expected that suitable nesting, roosting, and foraging habitat will be available through the mix of habitats provided during the life of the Plan, in addition to wetland area protection. Snag retention may provide potential nesting opportunities. The Headwaters Reserve and MMCAs provide some suitable nesting habitat, although it does not generally border foraging habitat. If a nest is discovered in a THP area it will be afforded a 200' no cut buffer during the nesting season, or until it can be shown that young have fledged. Following the nesting season or fledging of young the buffer may be harvested with the exception of the nest tree.

e) Potential Impacts of the Incidental Taking

The Plan Area is a relatively small portion of this species overall range and distribution. Measures to maintain habitat and avoid impacts make the possibility of adverse impacts very low.

f) Monitoring/Adaptive Management

Currently there are no known nests of this species on PALCO lands. Therefore, the surveys described above (general reconnaissance surveys and burrowing owl surveys) will serve as monitoring for black-shouldered kites. If a nest is found as a result of the surveys, protection measures will consist of 200' radius buffers of no harvest during the nesting season, or until it can be shown that young have fledged. Protection measures will be monitored for compliance and effectiveness. Data gathered shall be reported to the USFWS and CDFG.

2. *Circus cyaneus*, northern harrier

a) Natural History

The northern harrier is a California species of special concern. This species ranges throughout the length of the state (Small 1974). This species nests on the ground in marshy, wetland habitats.

b) Baseline Condition

The species is a common migrant and winter visitor; and an uncommon breeder and summer resident, likely to be found in any open habitat (Harris 1991). No nests of this species are known

to occur on the PALCO ownership. The northern harrier is often seen foraging in open grasslands such as on the Bear River Ridge and Eel River Bottoms (Bear-Mattole and Eel WAAs). There are approximately 3,836 acres of open prairie grassland habitat currently in the Plan Area (Volume I, Table 4).

c) Activities with Potential for Impacts

Covered activities with the potential to impact this species include gravel and rock extraction, road construction, and grazing. Impacts from gravel or rock extraction are highly unlikely. If an undetected nest of this species were to occur in or near a borrow pit, direct or indirect impacts are possible. Road construction could lead to the damage of undetected nests. Livestock grazing could likewise lead to nest damage.

d) Mitigation Measures

Maintenance of habitat diversity, including grassland habitats, and riparian protection are the general mitigations for this species. There is very low potential for impacts to this species as a result of this Plan as the northern harrier does not utilize forested habitats, and gravel operations do not occur in what is considered suitable habitat. There is a very low level of use for grazing in the Plan Area (see for example Volume I, Covered Activities).

e) Potential Impacts of the Incidental Taking

The Plan Area is a relatively small portion of this species overall range and distribution. Since the northern harrier does not use forested habitats and operations are not likely to significantly impact foraging habitat, it is likely that adverse impacts will be avoided, or levels of impact would be very low.

f) Monitoring/Adaptive Management

Currently there are no known nests of this species on PALCO lands. Therefore, the surveys described above (general reconnaissance surveys and burrowing owl surveys) will serve as monitoring for northern harriers. If a nest is found as a result of the surveys, protection measures will consist of 200' radius buffers of no harvest during the nesting season. Protection measures will be monitored for compliance and effectiveness. Data gathered shall be reported to the USFWS and CDFG.

3. *Strix nebulosa*, great gray owl

a) Natural History

The great gray owl is a California state endangered species, and a U.S. Forest Service sensitive species. In the US this species nests commonly in central and southern Alaska, but has an uneven distribution throughout its southern range, which includes the north central and northwestern states down to east-central California (Hayward and Verner 1994). This owl uses large, broken-topped trees or snags for nesting, usually near wet meadow habitats (Zeiner et al. 1990b.).

b) Baseline Condition

In the bioregion it is considered an accidental species, with only two records for the area (Harris 1996). There are no records for on or near the PALCO lands.

c) Activities with Potential for Impacts

Timber management activities could have the potential for impacts through habitat modification or disturbance of unknown nest sites.

d) Mitigation Measures

Since this owl is not known to nest or winter in the Plan Area at this time, adverse impacts are not expected. However, should the local status of great gray owls change, retention and recruitment of snags and wildlife trees will provide suitable nest structures in the plan area. Maintenance of habitat diversity is a general mitigation. The Headwaters Reserve and MMCAs will conserve potential habitat.

e) Potential Impacts of the Incidental Taking

There is extremely low potential for impact to this species due to the lack of numbers in the plan area.

f) Monitoring/Adaptive Management

The surveys described above in the burrowing owl discussion will serve as monitoring for this species. Nest sites located adjacent to THP areas will be afforded a 200' buffer during the nesting season or until it can be shown that young have fledged. Any nest sites found adjacent to a THP area during the life of the permit will be periodically monitored during the nesting season to determine if the nest is active, or if the default mitigations are effective. Data gathered shall be reported to the USFWS and CDFG.

4. *Asio flammeus*, short-eared owl

a) Natural History

The short-eared owl is a California species of special concern. This species ranges across the northern states and into the Canadian provinces. Small (1974) lists their range in the state of California for breeding as formerly the length of the state, but now known primarily as a non-breeder. The species once bred in small numbers locally throughout California in suitable habitat (Grinnell and Miller 1944) but now has vanished as a breeding bird for the south coast, and perhaps the San Joaquin Valley (Remsen 1978). The elimination of much marshland and tall grassland habitats in coastal lowlands, along with shooting, has led to declines (Remsen 1978). Habitat of this species is salt-water marshes, fresh-water marshes, tall grass meadows, and agricultural lands (Small 1974). This species will build its nests on the ground in marsh habitats, and forages in pastures and grasslands for meadow voles and other rodents.

b) Baseline Condition

In the north coast region this species is an uncommon to common migrant and winter visitor; and an accidental, apparent breeder (Harris 1991). No nests of this species are known to occur on the PALCO ownership, with suitable nesting habitat possibly not available. The short-eared owl is more commonly seen in locations such as the Eel River Bottoms, but potential habitat seems to exist in open grasslands and agricultural areas adjacent to the PALCO ownership. There are approximately 3,836 acres of prairie habitat in the Plan Area, of which some may be potentially suitable for this species.

c) Activities with Potential for impacts

Livestock grazing in the Plan Area has the potential to directly or indirectly impact this species.

d) Mitigation Measures

Maintenance of habitat diversity over time, including grassland habitats, and riparian protection are the general mitigations for this species. Although the Plan area includes approximately 3,836 acres of prairie habitat (see Volume I), it is predominantly ridgetop perennial grasslands, and not the bottomland pasture associated with this species. Due to the lack of suitable nesting habitat for this species in the Plan area, impacts are not expected.

e) Potential Impacts of the Incidental Taking

The Plan Area is a relatively small portion of this species overall range and distribution. Since the short-eared owl does not use forested habitats and operations are not likely to significantly impact foraging habitat, it is likely that take will not occur, or levels of incidental take would be very low.

3 Monitoring/Adaptive Monitoring

The surveys described above in the burrowing owl discussion will serve as monitoring for this species. Nest sites located adjacent to THP areas will be afforded a 200' buffer during the nesting season or until it can be shown that young have fledged. Any nest sites found adjacent to a THP area during the life of the permit will be periodically monitored during the nesting season to determine if the nest is active, or if the default mitigations are effective. Data gathered shall be reported to the USFWS and CDFG.

B. Mammals

1. *Plecotus townsendii townsendii*, Townsend's western big-eared bat

a) Natural History

Townsend's western big-eared bat is a California species of special concern. In California they range throughout the state, but the details of their distribution seems poorly known (Marcot 1984, Zeiner et al. 1990c.). The habitat of this species includes coastal conifer and broadleaf forests, oak woodlands, grasslands and deserts, and high elevation forests and meadows. Sites for roosting, nesting, and hibernacula include limestone caves, lava tubes, mine tunnels, buildings, and other man-made structures free of human disturbance (Williams 1986, Zeiner et al. 1990c.).

b) Baseline Condition

This species may have a widespread distribution in California, but is now considered uncommon, and may be absent from nursery colonies in limestone caves where they were once known (Zeiner et al. 1990c). No observations of this species have been recorded on this ownership, however, no surveys for bats have been conducted. Bat detection investigations by Seidman (1998) indicated heavy use of riparian areas for foraging and roosting, and very little use of upland areas, in old growth Douglas-fir forests of northern California.

c) Activities with Potential for Impacts

Timber management is a covered activity with the potential for impacts to this species. Although information is lacking as to the effects of timber harvest on this species, the apparent decline of populations in some areas could be due to human disturbance (Williams 1986). Potential disturbance to this species could occur if they roost in hollow snags or “goosepens” (bases of trees, typically mature redwood, hollowed out by fire or other means). If this is the case, then it is possible that removal of snags and live trees with these characteristics could cause adverse impacts to the species.

d) Mitigation Measures

Maintenance of habitat diversity over time, snag retention and recruitment, hardwood retention, and riparian protection are general mitigations for this species. The Headwaters Reserve and MMCAs will conserve suitable habitat. The retention and recruitment of habitat elements used by this species are expected to occur in both lower slope and upslope areas due to the aquatics conservation strategy, spotted owl habitat retention zones, and other habitat retention areas for the snag strategy.

e) Potential Impacts of the Incidental Taking

The Plan Area is relatively insignificant in relation to the overall range and distribution of this species. Conservation measures which protect riparian vegetation and retain and recruit snags and wildlife trees will protect the habitat of this species in the Plan Area.

f) Monitoring/Adaptive Management

Compliance monitoring for this species will be accomplished through inventory of forest seral types, snags and downed logs, and riparian buffers. Effectiveness of the mitigation will be monitored through the habitat element retention and recruitment strategy. Data gathered on the habitat elements of this species will be reported in five year intervals.

2. *Antrozous pallidus*, pallid bat

a) Natural History

The pallid bat is a California species of special concern. The range of this species in California is apparently throughout the state, where it is abundant in the Sonoran life zones (Ingles 1965). This account would place the species in the drier regions of the north coast, in association with valley oak, cottonwood, blue oak, and interior live oak. In these habitats it uses caves, mine tunnels, crevices in rocks, buildings, and trees for roosts (Burt and Grossenheider 1964, Zeiner et

al. 1990c.). The pallid bat may be a species of concern due to the loss of valley oak habitat, or due to abandonment of roost sites due to human disturbance, as recorded for other similar species.

b) Baseline Condition

This bat is a locally common species with a widespread distribution throughout California (Zeiner et al. 1990c). Infrequent incidental sightings of this species on PALCO indicate that this species is associated with cavities in snags and other large wildlife trees. Bat detection investigations by Seidman (1998) indicated heavy use of riparian areas for foraging and roosting, and very little use of upland areas, in old growth Douglas-fir forests of northern California.

c) Activities with Potential for Impacts

Timber management activities have the potential for impacts through habitat modification, and adverse impacts through disturbance of unknown nest or roost sites.

d) Mitigation Measures

Maintenance of habitat diversity over time, snag retention and recruitment, hardwood retention, and riparian protection are general mitigations for this species. The Headwaters Reserve and MMCAs will conserve suitable habitat. The retention and recruitment of habitat elements used by this species are expected to occur in both lower slope and upslope areas due to the aquatics conservation strategy for Class II watercourses, spotted owl habitat retention zones, and other habitat retention areas for the snag strategy.

e) Potential Impacts of the Incidental Taking

The Plan Area is relatively insignificant in relation to the overall range and distribution of this species. Conservation measures which protect riparian vegetation and retain and recruit snags and wildlife trees will protect the habitat of this species in the Plan Area.

f) Monitoring/Adaptive Management

Compliance monitoring for this species will be accomplished through inventory of forest seral types, snags and downed logs, and riparian buffers. Effectiveness of the mitigation will be monitored through the habitat element retention and recruitment strategy. Data gathered on the habitat elements of this species will be reported in five year intervals.

3. *Arborimus albipes*, white-footed vole

a) Natural History

The white-footed vole is a California species of special concern. The range of this species in California is not well understood, and it may not occur on this ownership as indicated by Ingles (1965). Maser (1966) suggested that the species occupies a coastal strip of unknown width. According to Zeiner et al. (1990c.) in California it is known only from Humboldt and Del Norte Counties. The leaves of red alder make up a large portion of the diet of this species. This vole tends to nest on the ground, constructing a nest of dried vegetation under logs, stumps, or rocks (Zeiner et al. 1990c.). Anecdotal information suggests that an abundance of woody debris near

the watercourses may characterize suitable habitat (Gonzales, pers. comm.).

b) Baseline Condition

No observations of this species have been documented to occur on the PALCO ownership. To date none have been detected on multi-species plots. Recent investigations by the Department of Fish and Game and others indicate that the Jacoby Creek drainage may be the southern extent of this species range on the coast, which is north of PALCO (Gonzales pers.comm., Lawlor pers. comm.).

c) Activities with Potential for Impacts

Timber management activities, specifically removal of large woody debris from watercourses or harvest of red alder could potentially impact this species.

d) Mitigation Measures

Protection of riparian habitats, maintenance of habitat diversity, downed log retention, and large woody debris recruitment and retention are the general mitigations proposed as part of the Plan, which should maintain suitable habitat for this species. The Headwaters Reserve and MMCAs will conserve suitable habitat. Experience on the PALCO ownership indicates that red alder will continue to occupy a significant amount of the mesic growing space following harvest activities.

e) Potential Impacts of the Incidental Taking

It is strongly possible that this species range does not overlap the plan area, and therefore adverse impact is highly unlikely. Conservation measures which protect riparian vegetation and retain and recruit downed woody material will protect potential habitat of this species in the Plan Area.

f) Monitoring/Adaptive Management

Compliance monitoring for this species will be accomplished through inventory of forest seral types, snags and downed logs, and riparian buffers. Effectiveness of the mitigation will be monitored through the habitat element retention and recruitment strategy. Data gathered on the habitat elements of this species will be reported in five year intervals.

4. *Gulo gulo luteus*, California (Pacific) wolverine

a) Natural History

The California wolverine is a California state threatened species and a California fully protected species. The Pacific (or California) wolverine, *G.g luteus*, **was** first described by Elliot (1903) and was recognized as a southern subspecies by Grinnell et al. (1937) solely on the basis of skull characteristics. Apparently, other evidence to support a subspecific classification for *G.g luteus* has not emerged (Ruggiero et al. 1994). The wolverine is a scarce resident of North Coast mountains and the Sierra Nevada (Zeiner et al. 1990c.). Wolverines are apparently omnivores, and will travel large distances in search of food. Limited information is available for denning habitat in forested environments, but dens can occur in holes dug under logs, in hollow logs, and other cavities in trees or rocky areas (Ruggiero et al. 1994). Associations between wolverines

and forest seral stages are difficult to make. The species is generally associated with high elevation, boreal forest, often in the absence of human activity.

b) Baseline Condition

Wolverine sightings are rare, even where they are relatively abundant, and a lack of detections does not indicate a lack of presence (Ruggiero et al. 1994). Although the reported range of this species does not overlap PALCO lands the species could potentially occur on the property. There have been no observations of this species on or near PALCO lands. Trailmaster cameras have not recorded wolverines over approximately 2,000 camera nights in 1995 and 1996 on the multi-species study. Continued effort on this study in 1998 has had similar negative results.

c) Activities with Potential for Impacts

Timber management activities have the potential for indirect impacts through habitat modification.

d) Mitigation Measures

Mitigations for this species include the Headwaters Reserve and MMCAs, maintenance of habitat diversity including late seral, and retention and recruitment of snags and other large wildlife trees.

e) Potential Impacts of the Incidental Effects

It is possible that this species' range does not overlap the Plan Area, and therefore impacts are highly unlikely. Conservation measures which include maintenance of habitat diversity, including late seral, and retention and recruitment of snags and other large wildlife trees will maintain potential habitat elements and make the possibility of impacts extremely low.

f) Monitoring

Compliance monitoring for this species will be accomplished through inventory of forest seral types, snags and downed logs, and riparian buffers. Effectiveness of the mitigation will be monitored through the habitat element retention and recruitment strategy. Data gathered on the habitat elements of this species will be reported in five year intervals.

C. Plants

1. *Arctostaphylos canescens ssp. sonomensis*

Common Name: Sonoma manzanita

Family Name (Common): Ericaceae (Heath)

Status: CNPS List 1B / R-E-D 2-2-3 / State none / Federal none

Range: The range of the Sonoma manzanita is the western Klamath Ranges, Outer North Coast Ranges (Hickman 1993) and much of Rincon Ridge in Sonoma County (Skinner and Pavlik 1994).

USGS 7.5' Quads.: Sonoma (500C), Santa Rosa (501B), Cow Mountain (550A), Purdy's Gardens (550D), Potato Hill (565D), Plaskett Ridge (581 B), Hull Mountain (581C), Sanhedrin Mtn. (582D), Mendocino Pass (597C), Log Spring (597D), Noble Butte (6008) Grouse Mtn. (670C), Hennessy Peak (670D)

Habitat: Chaparral and Lower Montane Coniferous Forest habitat types, sometimes on serpentinite (Skinner and Pavlik 1994) ridges, slopes, chaparral, forest between 200-1500 meters or 650-5000 feet in elevation (Hickman 1993) and gravelly ridges (Abrams 1951).

Blooms: January-March

Known and Potential Impacts: Threatened by development (Skinner and Pavlik 1994). There is potential for impact to the Sonoma manzanita with timber management activities that affect inland ridgelines (especially on serpentine substrates).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is unlikely within the ownership.

2. *Astragalus agnicidus*

Common Name: Humboldt milk-vetch

Family Name (Common): Leguminosae or Fabaceae (Legume)

Status: CNPS List 1B / R-E-D 3-3-3 / State Endangered / Federal SOC

Range: The range of the Humboldt milk-vetch is the Outer North Coast Ranges in southern Humboldt County (Hickman 1993).

USGS 7.5' Quads.: Miranda (617A)

Habitat: Disturbed openings in the Broadleafed Upland Forest habitat type (Skinner and Pavlik 1994) open soil in woodlands around 750 meters or 2500 feet in elevation (Hickman 1993) and disturbed woods around 2500 feet in elevation (Munz and Keck 1970).

Blooms: June-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the Humboldt milk-vetch with timber management activities that affect ridgelines and openings in the Broadleafed Upland Forest habitat (especially in southern Humboldt County).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is common within the southern portion of the ownership.

3. *Benioniella oregona*

Common Name: Benson's saxifrage or benioniella

Family Name (Common): Saxifragaceae (Saxifrage)

Status: CNPS List 1B / R-E-D 3-3-2 / State Rare / Federal SOC

Range: The range of *bensoniella* is the Klamath Ranges, southwest Oregon (Hickman 1993) and northwestern North Coast Ranges (Skinner and Pavlik 1994).

USGS 7.5' Quads.: Mad River Buttes (653A), Maple Creek (671 D)

Habitat: Bogs and Fens and mesic sites in Meadows and openings in the Lower Montane Coniferous Forest habitat types (Skinner and Pavlik 1994) wet meadows and bogs at greater than 1000 meters or 3300 feet in elevation (Hickman 1993) and damp soil (Abrams 1944).

Blooms: July

Known and Potential Impacts: Threatened by logging and grazing (Skinner and Pavlik 1994) There is potential for impact to the *bensoniella* with timber management activities that affect elevated wetland habitats in the coniferous forest.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is unlikely within the ownership.

4. *Boschniakia hookeri*

Common Name: small ground-cone

Family Name (Common): Orobanchaceae (Broom-Rape)

Status: CNPS List 2 / R-E-D 3-1-1 / State none / Federal none

Range: The range of the small ground-cone is the northern San Francisco Bay Area, the Outer North Coast Ranges to British Columbia (Hickman 1993).

USGS 7.5' Quads.: San Rafael (467A), Bolinas (467B), Purdeys Gardens (550D), Salyer (670A) Orleans (704D), High Divide (740A)

Habitat: Parasitic on salal (*Gaultheria shallon*) and huckleberry (*Vaccinium* spp.) in the North Coast Coniferous Forest habitat type (Skinner and Pavlik 1994) generally on salal in open woods and shrubby places at less than 300 meters or 1000 feet in elevation (Hickman 1993) salal in the Mixed Evergreen Forest, Redwood Forest and Northern Coastal Scrub plant communities (Munz and Keck 1970) parasitic on salal in moist woods (Abrams 1944) and usually growing with salal at low elevations in the Pacific Northwest (Pojar and MacKinnon 1994).

Blooms: April-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the small ground-cone with timber management activities that affect low elevation, shrubby, and open coniferous forest.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is common within the ownership.

5. *Calamagrostis foliosa*

Common Name: leafy reed grass

Family Name (Common): Gramineae or Poaceae (Grass)

Status: CNPS 4 / R-E-D 1-2-3 / State Rare / Federal none

Range: The range of leafy reed-grass is the North Coast, and the Outer North Coast Ranges with many occurrences in the King Range in Humboldt County (Hickman 1993).

USGS 7.5' Quads.: Westport (585A), Bear Harbor (60IB), Shubrick Peak (618B), Shelter Cove (618D), Cooskie Creek (619A), Buckeye Mtn. (636C), Bull Creek (636D), Petrolia (637D), Klamath Glen (722C)? (Matthews 1990)

Habitat: Coastal Bluff Scrub and rocky sites in the North Coast Coniferous Forest habitat types (Skinner and Pavlik 1994) bluffs, cliffs, coastal scrub and forest at less than 1200 meters or 3900 feet (Hickman 1993) and rocky places near the coast in the North Coastal Scrub plant community (Munz and Keck 1970).

Blooms: May-September

Misc. Notes: The Del Norte County occurrence is considered questionable as habitat and range are atypical (herbarium specimen from Red Mountain needs to be checked).

Known and Potential Impacts: Threatened by grazing (Skinner and Pavlik 1994). There is potential for impact to the leafy reed grass with timber management activities that affect rocky and grassy openings in the coastal forest (especially in southwestern Humboldt County).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited to the southwestern portion of the ownership.

6. *Carex lep talea*

Common Name: flaccid sedge

Family Name (Common): Cyperaceae (Sedge)

Status: CNPS List 2 / R-E-D 3-2-1 / State none / Federal none

Range: The range of the flaccid sedge extends along the Central Coast, the North Coast and the Outer North Coast Ranges (Hickman 1993).

USGS 7.5' Quads.: Drakes Bay (485C) [extirpated], Fields Landing (6548) Rodgers Peak (689A), Trinidad (689C), Cant Hook Mtn. (7228)

Habitat: Bogs and Fens, Meadows and Seeps, and Marshes and Swamps habitat types (Skinner and Pavlik 1994) wet meadows and swamps below 700 meters or 2300 feet in elevation (Hickman 1993) wet ground of swamps and low meadows between 100-2300 feet in elevation in the Coast Prairie to Yellow Pine Forest plant communities (Munz and Keck 1970) and sphagnum bogs (Norris pers. corn. 1996).

Blooms: May-July

Known and Potential Impacts: Threatened by wetland conversion (Skinner and Pavlik 1994). There is potential for impact to the flaccid sedge with timber management activities that affect wetland habitats (especially mossy bogs).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

7. *Carex praticola*

Common Name: meadow sedge

Family Name (Common): Cyperaceae (Sedge)

Status: CNPS List 2 / R-E-D 2-2-1 / State none / Federal none

Range: The range of the meadow sedge is the North Coast in Humboldt County, southern and central High Sierra Nevada and North America (Hickman 1993).

USGS 7.5' Quads.: Tioga Pass (454A), Tiltill Mtn. (472C), Willow Creek (67OB), Lord-Ellis Summit (671A), Eureka (672C), Orick (706D), Crescent City (740C)

Habitat: Meadows habitat type (Skinner and Pavlik 1994), moist to wet meadows below 3200 meters or 10500 feet in elevation (Hickman 1993), and meadows and open woods near sea level to 2000 feet in the Coastal Prairie and North Coast Coniferous Forest plant communities (Munz and Keck 1970).

Blooms: May-July

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the meadow sedge with timber management activities that affect wet meadows.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

8. *Epilobium oregonum*

Also Known As: *E. exaltatum* E. Drew

Common Name: Oregon fireweed

Family Name (Common): Onagraceae (Evening Primrose)

Status: CNPS 1B / R-E-D 2-2-2 / State none / Federal SOC

Range: The range of the Oregon fireweed is the Klamath Ranges, Outer North Coast Ranges, and southwest Oregon (Hickman 1993).

USGS 7.5' Quads.: Pyramid Peak (523C), Echo Lake (523D), Plaskett Meadows (581A), Mendocino Pass (597C), Leech Lake Mtn. (598A), Dubakella Mtn. 15' SE (632D), Forest Glen (633D), Black Lassie (634D), Sims Mtn. (652A), Board Camp Mtn. (652B), Mad River Buttes (653A), Iaqua Buttes (653B), Trinity Center (666B), Covington Mill (667A), Siligo Peak (667B), Denny (669B), Ironside Mtn. (669C), willow Creek (67OB), Grouse Mtn. (67OC), Dunsmuir (682A), Ycatapom Peak (684D), Youngs Peak (686A), Salmon Mtn. (686B), Trinity Mtn. (686C), Mount

Eddy (699C), City of Mount Shasta (699D) [extirpated], Orleans Mtn. (703C), Ukonom Mtn. (720Q Ukonom Lake (720D), Chimney Rock (721C), Dillion Mtn. (721 D), Buckhorn Bally (735A), Shelley Creek Ridge (739A)

Habitat: Bogs and Fens and mesic sites in the Lower and Upper Montane Coniferous Forest habitat types (Skinner and Pavlik 1994) bogs, small streams and ditches between 500-1600 meters or 1600-5200 feet in elevation (Hickman 1993) wet places (Abrams 1951) and commonly on serpentine substrates (Jimerson et al. 1995)

Blooms: June-August

Known and Potential Impacts: Threatened by logging (Skinner and Pavlik 1994). There is potential for impact to the Oregon fireweed with timber management activities that affect inland and serpentine wetland habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

9. *Glyceria grandis*

Common Name: American manna grass

Family Name (Common): Gramineae or Poaceae (Grass)

Status: CNPS List 2 / R-E-D 3-1-1 / State none / Federal none

Range: The range of the American manna grass is the North Coast, North Coast Ranges to British Columbia, eastern United States (Hickman 1993) and eastside Sierra Nevada (Skinner and Pavlik 1994).

USGS 7.5' Quads.: Big Alkali (4708) Bridgeport (487C), Coleville (505D), Point Arena (5378) Tahoe City (538B)

Habitat: Bogs and Fens, Meadows, Seeps, and Marshes and Swamps habitat types also streambanks and lake margins (Skinner and Pavlik 1994) wet places, meadows, lake and stream margins at less than 500 meters or 1640 feet in elevation (Hickman 1993) and marshes and wet soil (Abrams 1923).

Blooms: June-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the American manna grass with timber management activities that affect riparian and wetland habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is patchy within the ownership.

10. *Hesperolinon adenophyllum*

Also Known As: *Linum adenophyllum* A. Gray

Common Name: glandular dwarf flax or glandular western flax

Family Name (Common): Linaceae (Flax)

Status: CNPS 1B / R-E-D 2-2-3 / State none / Federal none

Range: The range of the glandular dwarf flax is the northern and central North Coast Ranges, especially in Lake and Mendocino Counties (Hickman 1993).

USGS 7.5' Quads: Clearlake Highlands (5338) Whispering Pines (533C), Kelseyville (534A), Highland Springs (534B), The Geysers (534D), Barlett Springs (548B)?, Barlett Mtn. (549A), Upper Lake (549B), Lakeport (549C), Lucerne (549D), Cow Mountain (550A), Crockett Peak (565A), Lake Pillsbury (5658) Elk Mountain (565C), Potato Hill (565D), Van Arsdale Reservoir (566A), Redwood Valley (566C), Potter Valley (566D), Willits (567A), Burbeck (567B), Sanhedrin Mtn. (582D), Longvale (583C), Fortuna (654C) [extirpated]

Habitat: Serpentine substrates in Chaparral and Valley and Foothill Grassland habitat types (Skinner and Pavlik 1994) serpentine chaparral between 150-1000 meters or 500-3200 feet in elevation (Hickman 1993) open hillsides (Abrams 1951) and dry brushy hills and woods, at least partly on serpentine, 1500-4500 feet in elevation in Chaparral and Northern Oak Woodland plant communities (Munz and Keck 1970).

Blooms: May-August

Known and Potential Impacts: Threatened by geothermal development, recreation and grazing (Skinner and Pavlik 1994). There is potential for impact to the glandular dwarf flax with timber management activities that affect grassland and woodland habitats (especially on serpentine substrates).

Ownership Occurrence: Occurrence of this species within the ownership is not known and potential habitat for this species is limited within the ownership.

11. *Lathyrus palustris*

Common Name: marsh pea

Family Name (Common): Leguminosae or Fabaceae (Legume)

Status: CNPS List 2 / R-E-D 2-2-1 / State none / Federal none

Range: The range of the marsh pea extends from the northern North Coast to Alaska, northeast North America, and circumboreal (Hickman 1993).

7.5' Quads: Shelter Cove (618D), Eureka (6726) Rodgers Peak (689A), Trinidad (689C), Sister Rocks (7238) Smith River (7408) Crescent City (740C)

Habitat: Bogs and Fens, Marshes and Swamps, Coastal Prairie, Coastal Scrub, and mesic sites in the Lower Montane Coniferous Forest and North Coast Coniferous Forest habitat types (Skinner and Pavlik 1994) moist coastal areas generally less than 100 meters or 330 feet in elevation (Hickman 1993) moist or wet places along the coast (Munz and Keck 1970) and moist or wet ground (Abrams 1944).

Blooms: May-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the marsh pea with timber management activities that affect coastal prairie, riparian, and other coastal wetland habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

12. *Lilium occidentale*

Common Name: western lily

Family Name (Common): Liliaceae (Lily)

Status: CNPS 1B / R-E-D 3-3-2 / State Endangered I Federal Endangered.

Range: The range of the western lily is the Humboldt Bay area in Humboldt County, the coastal strand and scrub south of Crescent City in Del Norte County, and southwest Oregon (Hickman 1993).

USGS 7.5' Quads.: Fields Landing (6548) Cannibal Island (655A), Eureka (672C), Arcata South (672D), Sister Rocks (7238) Crescent City (740C)

Habitat: Bogs and Fens, Coastal Bluff Scrub, Coastal Prairie, freshwater Marshes and Swamps, and openings in the North Coast Coniferous Forest habitat types (Skinner and Pavlik 1994) coastal scrub or prairie, and gaps in the North Coast Coniferous Forest habitat type at less than 100 meters or 328 feet in elevation (Hickman 1993), and sandy loam or peat soils in thickets and among ferns in the North Coastal Scrub (Munz and Keck 1970).

Blooms: June-July

Known and Potential Impacts: Threatened by development, grazing and horticultural collecting (Skinner and Pavlik 1994). There is potential for impact to the western lily with timber management activities that affect low elevation coastal forest and other activities that affect the immediate coastal habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited to small holdings along the Humboldt Bay south spit and north of Centerville Beach.

13. *Lycopodium clavatum*

Common Name: running-pine

Family Name (Common): Lycopodiaceae (Club-Moss)

Status: CNPS List 2 / R-E-D 2-1-1 / State none I Federal none

Range: The range of running-pine extends from the North Coast up into Alaska, Montana, eastern North America, Caribbean, South America, Eurasia, Africa, and Asia (Hickman 1993).

USGS 7.5' Quads.: Sims Mountain (652A), Blue Lake (6718) Arcata North (672A), Arcata South (672D), Rodgers Peak (689A), Trinidad (689C), Crannell(689D)

Habitat: Marshes and Swamps, and mesic sites in the North Coast Coniferous Forest habitat types (Skinner and Pavlik 1994) moist ground and swamps, Rarely on trees, at less than 200 meters or 650 feet in elevation (Hickman 1993) forms dense mats on trees and banks at around 500 feet in elevation in the Douglas-fir Forest plant community (Munz and Keck 1970) and moist coniferous woods, brushy slopes and boggy situations (Abrams 1944).

Blooms: July-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the running-pine with timber management activities that affect the North Coastal Coniferous Forest habitat (especially ridgelines and swamps in the Humboldt Bay area).

Ownership Occurrence: Known occurrence of this species within the ownership, occurrence has been noted in the Humboldt Bay watershed.

14. ***Microseris borealis***

Common Name: northern microseris

Family Name (Common): Compositae or Asteraceae (Sunflower)

Status: CNPS List 2 / R-E-D 3-3-1 / State none / Federal none

Range: The range of the northern microseris is the Outer North Coast Ranges (Bald Mtn., Humboldt County) to Alaska (Hickman 1993)

USGS 7.5' Quads.: Mendocino (569D) [extirpated], Lord-Ellis Summit (671A)

Habitat: Bogs and Fens, Meadows, and mesic sites in the Lower Montane Conifer Forest habitat types (Skinner and Pavlik 1994) wet meadows and sphagnum bogs between 1000-2000 meters or 3300-6600 feet in elevation (Hickman 1993) and boggy places between 3000-4000 feet in elevation in the Yellow Pine Forest plant community (Munz and Keck 1970).

Blooms: June-September

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the northern microseris with timber management activities that affect mesic sites of the inland coniferous forest and montane wet meadows.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is unlikely within the ownership.

15. ***Monardella villosa* ssp. *globosa***

Common Name: robust monardella

Family (Common Name): Laminaceae or Labiatae (Mint)

Status: CNPS 1B / R-E-D 3-2-3 / State none / Federal none

Range: The range of the robust monardella is the San Francisco Bay Area and the Outer North Coast Ranges (Hickman 1993).

USGS 7.5' Quads.: Mindogo Hill (428C), Niles (446C), Briones Valley (4658) Oakland East (465C), Benicia (482C), Vine Hill (482D), Bodega head (503D), Healdsburg (518D), Weott (635C).

Habitat: Openings in the Chaparral and Cismontane Woodland habitat types (Skinner and Pavlik 1994) and openings in oak woodlands and chaparral below 1300 meters or 4300 feet in elevation (Hickman 1993).

Blooms: June-July

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the robust monardella with timber management activities that affect woodland and grassland habitats (especially southern Humboldt County).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is patchy within the ownership.

16. ***Monotropa uniflora***

Common Name: Indian-pipe

Family Name (Common): Ericaceae (Heath) or Pyrolaceae (Wintergreen)

Status: CNPS List 2 / R-E-D 2-2-1 / State none / Federal none

Range: This species range extends from the North Coast and Klamath Ranges to British Columbia, eastern North America, Central America, northern South America, and eastern Asia (Hickman 1993).

USGS 7.5' Quads.: Eureka (672C), Crescent City (740C), Hiouchi (740D)

Habitat: Broadleafed Upland Forest, and North Coast Coniferous Forest habitat types (Skinner and Pavlik 1994) low mixed or coniferous forests at less than 200 meters or 650 feet in elevation (Hickman 1993) shaded damp woods below 2000 feet in elevation in the Mixed Evergreen Forest and Redwood Forest plant communities (Munz and Keck 1970) and deep moist woods in rich humus (Abrams 1944).

Blooms: June-July

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the Indian-pipe with timber management activities that affect coastal hardwood forest and coniferous forest habitats (especially mature and closed-canopy stands).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is common within the ownership.

17. *Montia howelli*

Common Name: Howell's montia

Family Name (Common): Portulacaceae (Purslane)

Status: CNPS 1A / R-E-D none / State none / Federal SOC

Range: The range of Howell's montia formerly extended into Northwest California, and at present the range is western Oregon and Washington into British Columbia (Hickman 1993).

USGS 7.5' Quads.: Miranda (617A) [extirpated], Briceland (617C) [extirpated], Garberville (617D) [extirpated], Bridgeville (635A) [extirpated], Salyer (670A) [extirpated], Eureka (672C) [extirpated]

Habitat: Wet disturbed sites around Meadows, Vernal Pools, and North Coast Coniferous Forest habitat types (Skinner and Pavlik 1994) around vernal pools often on compacted soil at less than 400 meters or 1300 feet in elevation (Hickman 1993) wet shaded places near the coast in the Redwood Forest plant community (Munz and Keck 1970) moist and lowland habitats (Pojar and MacKinnon 1994) and moist meadows (Abrams 1944).

Blooms: March-May

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the Howell's montia with timber management activities that affect wet areas (especially vernal and disturbed) in the coastal coniferous forest and meadow habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is common within the ownership.

18. *Oenothera wolfii*

Common Name: Wolfs evening-primrose

Family name (Common): Onagraceae (Evening Primrose)

Status: CNPS 1 B / R-E-D 3-3-2 / State none / Federal SOC

Range: The range of this species is the northern North Coast and the western Klamath Ranges in Humboldt and Del Norte Counties (Hickman 1993).

USGS 7.5' Quads.: Capetown (637A), Cape Mendocino (6378) Carrville (683C), Crannell (689D), Orleans (704D), Orick (706D), Sister Rocks (7238) Requa (723D), Smith River (7408) Crescent City (740C)

Habitat: Coastal Bluff Scrub, Coastal Prairie, Coastal Dune, and sandy mesic sites in the Lower Montane Conifer Forest habitat types (Skinner and Pavlik 1994) and coastal dunes, bluffs, roadsides and general moist places perhaps also inland at less than 100 meters or 328 feet in elevation (Hickman 1993).

Blooms: May-October

Known and Potential Impacts: Threatened by foot traffic, road maintenance, non-native plants, and hybridization with non-native *Oenothera* spp. (Skinner and Pavlik 1994). There is no potential for impact to the Wolf's evening-primrose with timber management activities, however other activities that affect the immediate coastal habitats or coastal riparian gravel bars could potentially impact this species.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited to small holdings along the Humboldt Bay south spit and north of Centerville Beach.

19. *Sanguisorba officinalis* ssp. *microcephala*

Common Name: great burnet

Family Name (Common): Rosaceae (Rose)

Status: CNPS List 2 / R-E-D 2-2-I / State none / Federal none

Range: The range of the great burnet is the central North Coast, northwestern Klamath Ranges, northern Outer North Coast Ranges to Alaska (Hickman 1993).

Quads: Ukiah (55OB), Albion (553A), Mendocino (569D), Longvale (583C), Laytonville (583B), Cahto Peak (584A), Mad River Buttes (653A), Lord-Ellis Summit (671A) (?), Maple Creek (671 D), Ship Mountain (722A), Shelly Creek Ridge (739A), High Plateau Mtn. (7398) Gasquet (739C)

Habitat: Bogs and Fens, Broadleafed Upland Forest, Meadows, Marshes and Swamps, North Coast Coniferous Forest, and Riparian Forest habitat types often on serpentinite (Skinner and Pavlik 1994) bogs and streams often on serpentine between 120-1400 meters or 400-4900 feet in elevation (Hickman 1993) and swamps below 5000 feet in elevation in the Red Fir Forest plant community (Munz and Keck 1970).

Blooms: July-October

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential for impact to the great burnet with timber management activities that affect wetland areas in forest habitats (especially on serpentine substrates).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

20. *Sanicula tracyi*

Common Name: Tracy's sanicle

Family Name (Common): Umbelliferae or Apiaceae (Carrot)

Status: CNPS 1 B / R-E-D 1-2-3 / State none / Federal SOC

Range: The range of Tracy's sanicle is the North Coast Ranges (Humboldt and Trinity Counties), and Cascade Range Foothills (Butte County) (Hickman 1993).

USGS 7.5' Quads.: Clipper Mills (574C), Berry Creek (575B), Onion Butte (608A), Black Rock Mtn. 15' NW (6148) Black Rock Mtn. 15' SW (614C), Shannon Butte (615A), Zenia (6158) Lake Mountain (615C), Long Ridge (615D), Dubakella Mtn. SE (632D), Sportshaven (6338) Ruth Reservoir (633C), Forest Glen (633D), Dinsmore (634A), Larabee Valley (6348) Blocksburg

(634C), Black Lassie (634D), Board Camp Mtn. (6528) Showers Mtn. (652C), Blake Mountain (652D), Lord-Ellis Summit (671A), French Camp Ridge (688A), Chimney Rock (721C)

Habitat: Cismontane Woodland, openings in the Lower Montane Conifer Forest, and Upper Montane Conifer Forest habitat types (Skinner and Pavlik 1994) openings in the coniferous forest and woodland between 100-1000 meters or 320-3200 feet in elevation (Hickman 1993) and woods in the Mixed Evergreen Forest plant community (Munz and Keck 1970).

Blooms: April-July

Known and Potential Impacts: Threatened by grazing, logging, and development (Skinner and Pavlik 1994). There is potential to impact the Tracy's sanicle with timber management activities that affect inland coniferous forest and true oak woodland habitats (especially in southeastern Humboldt County).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is widespread in the southeastern portion of the ownership.

21. *Sidalcea malachroides*

Also Known As: *Malva malachroicies* Hook & Am.

Common Name: maple-leaved checkerbloom

Family Name (Common): Malvaceae (Mallow)

Status: CNPS 1B / R-E-D 2-2-2 / State none / Federal none

Range: The range of the maple-leaved checker-bloom is the North Coast, the Outer North Coast Ranges, northern and central Coast, San Francisco Bay Area, northern Outer South Coast Ranges, and western Oregon (Hickman 1993).

USGS 7.5' Quads.: Mt. Carmel (344A), Soberanes Point (3448) Big Sur (344D), Monterey (366C), Soquel(387B) Calaveras Reservoir (427A), Stewarts Point (520B), Point Arena (5378) Gualala (537D), Mallo Pass Creek (552C), Westport (585A), Inglenook (585D), Bear Harbor (601 B), Shelter Cove (618D), Redcrest (6358) Weott (6356) Scotia (636A), Petrolia (637D), Hydesville (654D), Blue Lake (671 B), Korbelt (671C), Eureka (672C), Arcata South (672D), Childs Hill (723A)

Habitat: Broadleafed Upland Forest, Coastal Prairie, and North Coast Coniferous Forest habitat types often on disturbed sites (Skinner and Pavlik 1994) woodlands and clearings near the coast at less than 700 meters or 2300 feet in elevation (Hickman 1993) found along the coast, especially disturbed sites, below 2000 feet in elevation in the Redwood Forest and Mixed Evergreen Forest plant communities (Munz and Keck 1970) disturbed places along the coast (Niehaus and Ripper 1976) and along streams and in moist places near the coast (Abrams 1944).

Blooms: May-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential to impact the maple-leaved checkerbloom with timber management activities that affect coastal forest habitats.

Ownership Occurrence: Known occurrence of this species within the ownership, occurrence has been noted in the Stitz Creek watershed.

22. *Sidalcea malvaeflora* ssp. *patula*

Common Name: Siskiyou checkerbloom

Family Name (Common): Malvaceae (Mallow)

Status: CNPS 1B / R-E-D 3-2-2 / State none / Federal SOC

Range: The range of the Siskiyou checkerbloom is the northern North Coast in Humboldt and Del Norte Counties, and southwestern Oregon (Hickman 1993).

USGS 7.5' Quads.: Fortuna (654C), Hydesville (6540) Ferndale (655D), Arcata North (672A), Eureka (672C) [possibly extirpated], Smith River (7408)

Habitat: North Coast Coniferous Forest, Coastal Prairie, and Coastal Bluff Scrub (?) habitat types (Skinner and Pavlik 1994) open coastal forest generally less than 700 meters or 2300 feet in elevation (Hickman 1993) and Redwood Forest plant community (Munz and Keck 1970).

Blooms: May-June

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential to impact the Siskiyou checkerbloom with timber management activities that affect coastal forest habitats and other activities that affect immediate coastal habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not known and potential habitat for this species is common within the ownership.

23. *Sidalcea oregana* ssp. *eximia*

Also Known As: *S. eximia* E. Greene

Common Name: coast checkerbloom

Family Name (Common): Malvaceae (Mallow)

Status: CNPS 1 B / R-E-D 3-2-3 / State none / Federal none

Range: The range of the coast checkerbloom is the northern North Coast and the Outer North Coast Ranges (Hickman 1993).

USGS 7.5' Quads.: Fields Landing (6548) Lord-Ellis Summit (671A), Arcata North (672A), Trinity Mtn. (SSSC), Panther Creek (SSSC), Smith River (7408) Crescent City (740C)

Habitat: Meadows, North Coast Coniferous Forest, and Lower Montane Coniferous Forest habitat types (Skinner and Pavlik 1994) meadows at less than 1200 meters or 3900 feet in elevation (Hickman 1993) wet meadows below 3500 feet in elevation in the Redwood forest and Mixed Evergreen Forest plant communities (Munz and Keck 1970) and wet meadows (Abrams 1944).

Blooms: June-August

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential to impact the coast checkerbloom with timber management activities that affect wet meadows in coniferous forest habitats.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

24. *Thermopsis robusta*

Also Known As (Munz & Keck 1970): *T. macrophylla* var. *macrophylla* Hook & Am.

Common Name: robust false lupine

Family Name (Common): Leguminosae or Fabaceae (Legume)

Status: CNPS 1 B / R-E-D 2-2-3 / State none / Federal none

Range: The range of the robust false lupine is the northern North Coast Ranges and Klamath Ranges in Humboldt, Del Norte, and Siskiyou Counties (Hickman 1993).

USGS 7.5' Quads.: Lord-Ellis Summit (671A), Weitchpec (687B), Somes Bar (703B), Bark Shanty Gulch (704A), Fish Lake (704C), Orleans (704D), Blue Creek Mtn. (705A), Johnsons (705D), Chimney Rock (721 C)

Habitat: Ridgetops in the North Coast Coniferous Forest habitat type (Skinner and Pavlik 1994) (openings along ridges in the Lower Montane Coniferous Forest and Broadleafed Upland Forest habitat types more closely applies, often associated with roads and serpentine transition areas), open places in the Mixed Evergreen Forest and Foothill Woodland plant communities below 4500 feet in elevation (Munz and Keck 1970) and wooded slopes or meadows (Abrams 1944).

Blooms: May-July

Known and Potential Impacts: Threatened by logging (Skinner and Pavlik 1994). There is potential to impact the false lupine with timber management activities that affect inland forest habitats (especially ridgelines).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is unlikely within the ownership.

25. *Thlaspi californicum*

Common Name: Kneeland Prairie pennycress

Family Name (Common): Cruciferae or Brassicaceae (Mustard)

Status: CNPS 1B / R-E-D 3-3-3 / State none / Federal FC

Range: The range of the Kneeland Prairie pennycress is the Outer North Coast Ranges, Kneeland Prairie in Humboldt County (Hickman 1993).

USGS 7.5' Quads.: Plaskett Ridge (581 B), Hull Mountain (581 C), laqua Buttes (653B), Hoopa (687C) [extirpated]

Habitat: Serpentine outcrops in the Broadleafed Upland Forest and the Coastal Prairie habitat types (Skinner and Pavlik 1994) and serpentine outcrops between 500-700 meters or 1600-2300 feet in elevation (Hickman 1993).

Blooms: May-June

Known and Potential Impacts: Threatened by road maintenance (Skinner and Pavlik 1994). There is potential to impact the Kneeland Prairie pennycress with timber management activities that affect serpentine substrates in coastal central Humboldt County.

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is limited within the ownership.

26. *Tracyina rosfrata*

Common Name: beaked tracyina

Family Name (Common): Compositae or Asteraceae (Sunflower)

Status: CNPS 1B / R-E-D 3-1-3 / State none / Federal none

Range: This species range is the North Coast in Humboldt and Lake Counties (Hickman 1993).

USGS 7.5' Quads.: Big Foot Mtn. (535C), Lakeport (549C), Alderpoint (616A), Fort Seward (616B), Jewett Rock (616D)

Habitat: Cismontane Woodland, and Valley and Foothill Grassland habitat types (Skinner and Pavlik 1994) grassy slopes below 500 meters or 1640 feet in elevation (Hickman 1993) and dry grassy slopes, between 400-1000 feet in elevation in the Coastal Prairie plant community and is locally frequent in southern Humboldt County (Munz and Keck 1970).

Blooms: May-June

Known and Potential Impacts: No recorded threats (Skinner and Pavlik 1994). There is potential to impact the beaked tracyina with timber management activities that affect woodland and grassland habitats (especially in southern Humboldt County).

Ownership Occurrence: Occurrence of this species within the ownership is not know and potential habitat for this species is patchy within the ownership.

27. Terminology

The preceding species accounts were based on literature review and the California Native Plant Society's (CNPS) 1996 electronic Inventory of *Rare and Endangered Vascular Plants of California*. The terms, abbreviations, and codes utilized are as follows:

- **Regional Species:** rare, threatened, endangered, or uncommon vascular plant species (state and/or federally listed, CNPS list 1A, 1B & 2, and CNPS list 3 & 4) with known occurrence in Humboldt County,
- **Focus Species:** rare, threatened, endangered, or uncommon vascular plant species with known occurrence or potential habitat within Pacific Lumber Company's ownership,

- **Primary Focus Species:** rare, threatened, or endangered vascular plant species (state and/or federally listed and CNPS list 1A, 1B & 2) with known occurrence or potential habitat within Pacific Lumber Company's ownership.
 - **CNPS 1A**, plants presumed extinct in California,
 - **CNPS 1B**, plants rare, threatened, or endangered in California, and elsewhere,
 - **CNPS 2**, plants rare, threatened, or endangered in California, but more common elsewhere,
 - **CNPS 3**, plants about which we need more information-a review list,
 - **CNPS 4**, plants of limited distribution-a watch list,
- **RED**, CNPS codes for rarity (R), endangerment (E), and distribution (D), with an order of magnitude severity of 1, 2, or 3 (1 being the lesser magnitude and 3 being the greatest) assigned for each corresponding RED attribute, e.g. RED 1-3-3,
- **FE**, federally-listed, endangered,
- **FC**, federal candidate for listing as threatened or endangered
- **SOC**, federal species of concern
 - **CE**, state-listed, endangered,
 - **CR**, state-listed, rare, and
- **USGS 7.5' Quadrangle numbers**, are based on the quad code system utilized by the California Department of Water Resources.

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